

Idaho Currents

Energy Division Is 'Showcase' Of Efficiency

The Idaho Energy Division moved into a new space within the Idaho Water Center in May – a space that is the most energy efficient in the entire building.

When the Idaho Department of Water Resources decided it needed to expand its office space, the Energy Division was the group designated to occupy the new area. It was also agreed that the 4,355-square-foot area should be a showcase of energy efficiency.

Since the unoccupied space was unfinished when the department decided to expand, the Energy Division had a "clean slate." After incorporating the energy efficiency recommendations, its estimated that 131,537-kilowatt-hours (kWh) of energy will be saved annually.

System upgrades

Several assessments of the area showed that the lighting and the heating, ventilating, and air conditioning systems could be improved. With 1,130 square feet of windows on two sides of the new office space, lighting sensors were installed to regulate the level of artificial light in area. The sensors contain photocells that detect the lighting level in the areas along the windows and automatically adjust the fluorescent lights.

Offices and the conference room are also fitted with motion sensors that automatically turn lights off when the spaces are unoccupied. The layout of the fixtures is designed to take advantage of natural light and provide more constant light levels, for a savings of 5,432 kWh annually.

Since the windows face the south and east and meet where a conference room is located, a continuous perimeter window return air system was installed to remove solar heat gain, for an energy savings of 124,482 kWh annually.

"We knew there was a potential for the conference room to get unusually hot, so it only made sense to install the return air system to help reduce the temperature and make the area more comfortable," says Bob Hoppie, Energy Division administrator.

HVAC system

IDWR's state office occupies most of the fifth floor, including the Energy Division, and the entire sixth floor of the Idaho Water Center. The building, completed in August 2004, uses geothermal wells for heating and cooling.



Light sensors installed in the ceiling throughout the Energy Division regulate the amount of artificial light needed in each specific area.
(Photo by Diane Stroup)

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Prior to moving to the new space, energy specialists monitored the HVAC system, which resulted in some modifications to help minimize the potential for hot and cold spots. Under floor controls and duct treatments were installed to eliminate the introduction of dust, improve return airflow and provide enhanced cooling operation, for a savings of 1,623 kWh annually.

Special partnership

Several agencies played a part in upgrading the Energy Division space to make it more energy efficient. The University of Idaho's Integrated Design Lab, led by Kevin Van Den Wymelenberg, consulted with the Division personnel to outline the lighting.



The Energy Division conference room windows, located on the southeast corner of the fifth floor of the Idaho Water Center, provide enough natural light to supplement the electric lights. (Photo by Diane Stroup)

Idaho Power Company provided financial support for the energy-related improvements, and Collier's International collaborated to incorporate the recommended improvement.

"This is a win-win situation," says Hoppie. "Any time a group of agencies can help to make a building more energy efficient, less resources are used for heating and cooling, and the occupants are in a more comfortable and healthier environment."

Green Tip

Fix any leaky faucets, toilets or water pipes. Even a small drip can add up to a lot of water over time.

Biofuel Grants Available

The Idaho Energy Division is accepting grant proposals from fuel retailers to install or upgrade biofuels infrastructure projects in Idaho.

Grants covering up to 50 percent of projects ranging from \$1,000 to \$100,000 per application will be awarded to install new fueling infrastructure or upgrade existing fueling infrastructure that is documented as being incompatible with biofuel, including cleaning existing storage tanks.

The grants are the result of legislation passed earlier this year enabling Idaho retail fuel dealers to invest in qualified fueling infrastructure projects dedicated to providing biofuels to their customers.

Biofuel means ethanol and biodiesel-blended fuels. Qualifying systems must provide biofuel blend at or above 10 percent ethanol (E-10) and 5 percent biodiesel (B5).

"We hope to award funding for up to 50 projects during the first year, with additional grants through 2012," says Bob Hoppie, Energy Division administrator. "We want to make biofuels readily available to businesses and citizens of Idaho. The use of these fuels will help reduce our dependence on foreign oil, help energy security and help rural economy producing local biofuels."

Grants will be awarded on a first-come, first-served basis until the funds are depleted. All work must be completed within 180 days following award notification. Successful grantees must provide biofuels to their customers continuously for five year from the date the project is put into service.

Grant applications are available online at www.energy.idaho.gov or by calling the Idaho Energy Hotline, 1-800-334-SAVE. For additional information, call John Crockett, with the Energy Division, at 208-287-4894.

Staying Cool In The Heat: Fans vs. Air Conditioners

Now that we're in the middle of summer and 90+ temperatures, we continue to rely on air conditioners and fans to keep us more comfortable during the heat waves.

Fifty years ago, not that many homes in Idaho were equipped with central air conditioning. People relied on shade trees and a few portable circulating fans to keep our homes and offices more comfortable. In fact, if you leave as many windows open all night, then close them before it starts to get warm outside, such as about 8 a.m., your air conditioner may not turn on until mid-afternoon, even on very hot days.

One of the misconceptions of air conditioning systems is the lower the thermostat setting, the cooler the air. Be careful how low the indoor thermostat is set – 76 degrees on a 90-degree day doesn't necessarily mean your home will be that cool. It just means your air conditioner will turn on sooner in the day and run longer in the evening.

During the summer, set the thermostat at 78 degrees or higher and try to use fans to move the air in areas that tend to be warmer. For every degree you raise the thermostat, your system saves up to 2 percent more energy.

Be sure to periodically clean your furnace filters, and have your air conditioner professionally serviced every year or two. Ask for a tune-up that includes a check of the refrigerant charge, cleaning of the coils, and an inspection of your duct system.

To help keep your home cool, make sure your home is well insulated. A home that is well insulated in the attic and all exterior walls will be much cooler in the summer and warmer in the winter.

Replacing an air conditioning system

Home air conditioning systems can be expected to last for 10-15 years. Good maintenance practices will provide an even longer service life. If your current system doesn't seem to be working as well as it used to, have a professional service person evaluate it to see if something is wrong that can be fixed.

If it's determined that it should be replaced, do some comparison-shopping to find the best one for your size of home. The efficiency of central air conditioners is measured in Seasonal Energy Efficiency Rating (SEER). Government standards currently require a minimum SEER of 13. When buying an air conditioner, choose models that are Energy Star® qualified.

Keep in mind that a new system should have the added benefit of reducing your operating cost because it is designed to be more efficient than your older model. When planning a system replacement, you may also want to make some other efficiency improvements.

If your old outdoor (condenser) unit is mounted on the roof or in an attic, consider moving it to a cooler location when you install a new unit. The best location is in a predominately shaded area close to your heating system.

Your condenser needs to be compatible with your indoor unit, so you may need to replace both units at the same time. Changing the outdoor unit to a newer high efficiency style may not give you the results you are paying for due to the mismatching of SEER ratings and age of equipment between units.

Correct sizing

Central air conditioning system sizes are measured in tons. One ton of cooling is 12,000 Btu per hour, which is equivalent to the rate of cooling produced by one ton of ice melting over the course of a day. The larger the home, the larger the air conditioning unit that will be needed. An air conditioner that is too large will cycle on and off and be much less efficient, while a unit that's too small may not produce sufficient cooling.

Remember, bigger is not necessarily better! To get the most out of your air conditioning system, make sure your home is well insulated, your heating and cooling ducts are free of leaks, and the return air can make its way back to the air handler.

Note: Information for this article was obtained from Idaho Power Company and Nexus Energy Software, Inc., and used with permission.

A Few Easy Tips Can Help Reduce Hot Temps At Home

For a few weeks every summer, it seems like an uphill battle to keep cool. A few low-cost habits will help keep your home more tolerable during our 90+ heat waves.

- Keep your doors and windows closed during the day and cover your windows where direct sunlight hits. Remember that any direct sunlight turns to heat whether it comes from the east, west or south.
- Open your windows in the evening after temperatures drop below about the indoor temperature, and if possible, keep them open all night. Remember to close them about 7 a.m., before temperatures again start to climb.
- Use your bathroom and kitchen exhaust fans to remove heated air and allow cooler air to enter through open windows. Be sure to turn off your air conditioner when the home is naturally cooled.
- Avoid using your stove and oven as much as possible. Microwave ovens are handy this time of year.
- When doing laundry use cold water and, if possible, dry your clothes and other items outside on a clothesline.
- Consider installing ceiling fans in the bedrooms and other frequently used rooms. Moving air can feel up to 4 degrees cooler than still air.

Leave your air conditioner on during the day to keep the mass of your home cool. Maintain the set point at your desired temperature – recommended no lower than 78 degrees F. Your air conditioner won't use much energy during the day, but your house will be comfortable when you return home. Remember if the house is allowed to warm up, your air conditioner will have to play catch up!

Energy Division Receives Achievement Award

The Idaho Energy Division is the recipient of the 2007 Energy Star Homes Outstanding Achievement Award presented by the U.S. Environmental Protection Agency.

The award recognizes the important contribution that the Division has made to energy-efficient construction and environmental protection by sponsoring Energy Star qualified homes in Idaho.

"Homes with the Energy Star label are at least 30 percent more efficient than homes built to standard state energy code," says Ken Eklund, principal energy specialist with the Energy Division. A total of 487 Idaho homes earned the Energy Star label in 2006.

Nationally, more than 725,000 homes have earned the Energy Star label since the program began in 1992. The first home to earn the Energy Star label in Idaho was in 1998. Since then, the Energy Division has certified more than 1,200 Energy Star site-built homes in Idaho.

Last year, with the help of the Energy Star program, Americans saved \$14 billion on their utility bills and also avoided greenhouse gas emissions equivalent to those of 25 million cars.

The program is now a joint venture with the Energy Division, Idaho Power Company, Avista, several consumer-owned utility companies, and the Northwest Energy Efficiency Alliance, a non-profit organization working to encourage the development and adoption of energy-efficient products and services.



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